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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/089,389

03/29/2002

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450108-03398

2393

20999 7590 03/03/2008
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EXAMINER

FLANDERS, ANDREW C

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

03/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/089,389	Applicant(s) KONDO ET AL.	
	Examiner ANDREW C. FLANDERS	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-20 is/are allowed.
- 6) ☒ Claim(s) 1-16 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 6, 11 – 16, 21 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Gao (U.S. Patent 6,842,733).

Regarding **Claim 1**, Inouse discloses:

A digital-signal processing apparatus for converting an input digital signal (Fig. 6), comprising:

envelope calculation means for calculating the envelope of the input digital signal (speech is input into section 10 which decomposes the speech into parts include an envelope of the input speech signal; col. 15 lines 8 - 15);

class classification means for classifying the input digital signal into a class according to the calculated envelope (classifier 26); and

prediction calculation means for prediction-calculating the input digital signal by a prediction method corresponding to the class to generate a digital signal converted from

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the input digital signal (analysis section 12 does a responsive long-term prediction procedure based on the input from detector 24; col.14 lines 30 – 40; i.e. linear predictive coding),

wherein the digital signal is provided to an output device (i.e. Output Speech shown in Fig. 6).

Regarding **Claim 2**, Inouse further discloses:

wherein the input digital signal is an audio signal (i.e. speech signal).

Regarding **Claim 3**, Inouse further discloses:

wherein the prediction calculation means uses prediction coefficients generated in advance by learning according to a desired signal (i.e. the prediction is a long term prediction, since it is long term, the later data uses these coefficients which are determined in advance).

Claims 4 – 6, 21 are rejected under the same grounds as 1 – 3.

Regarding **Claim 11**, in addition to the elements stated above regarding claim 1, Gao further discloses:

carrier extracting means for extracting a carrier from the input digital signal (i.e. a residual component; col. 15 lines 13 – 15);

modulation means for modulating the carrier according to the new envelope calculated by the envelope prediction calculating means to generate a new digital signal converted from the input digital signal (i.e. modulating the signal w/ reference information calculated w/ the system col. 13 lines 55 – 67).

Claims 12 – 16 and 23 are rejected under the same grounds as claims 1 – 6 and 11 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 – 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao (U.S. Patent 6,842,733).

Regarding **Claim 7**, all elements claimed in claim 7 are taught by Gao as stated above regarding claim 1 except apprentice-digital-signal generating means for generating an apprentice digital signal obtained by making a desired digital signal worse.

However, down sampling a voice signal is notoriously well known in the art. Applying a down sampling technique on the digital signal of Gao would remove samples

(and thus thin it out as disclosed by the apprentice technique in the specification) and meet the claimed limitation. It would be desirable to add such a feature in order to achieve a desired bandwidth or to save on bandwidth limitations.

Claims 8 – 10 and 22 are met by Gao as stated above.

Allowable Subject Matter

Claims 17 – 20 and 24 are allowed.

Regarding Claims 17, 19 and 24, the prior art teaches a first and second means for calculating an envelope (i.e. the short term and long term calculations), however they are of the same digital signal. It would not have been obvious to one of ordinary skill in the art to modify the art to achieve the claimed limitations of the first and second envelope calculating means.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW C. FLANDERS whose telephone number is (571)272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7546. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Acf

/Sinh N Tran/
Supervisory Patent Examiner, Art Unit 2615